



Motorola 52nd Street Superfund Site – Update Operable Unit 2 (OU2)

November 8, 2017



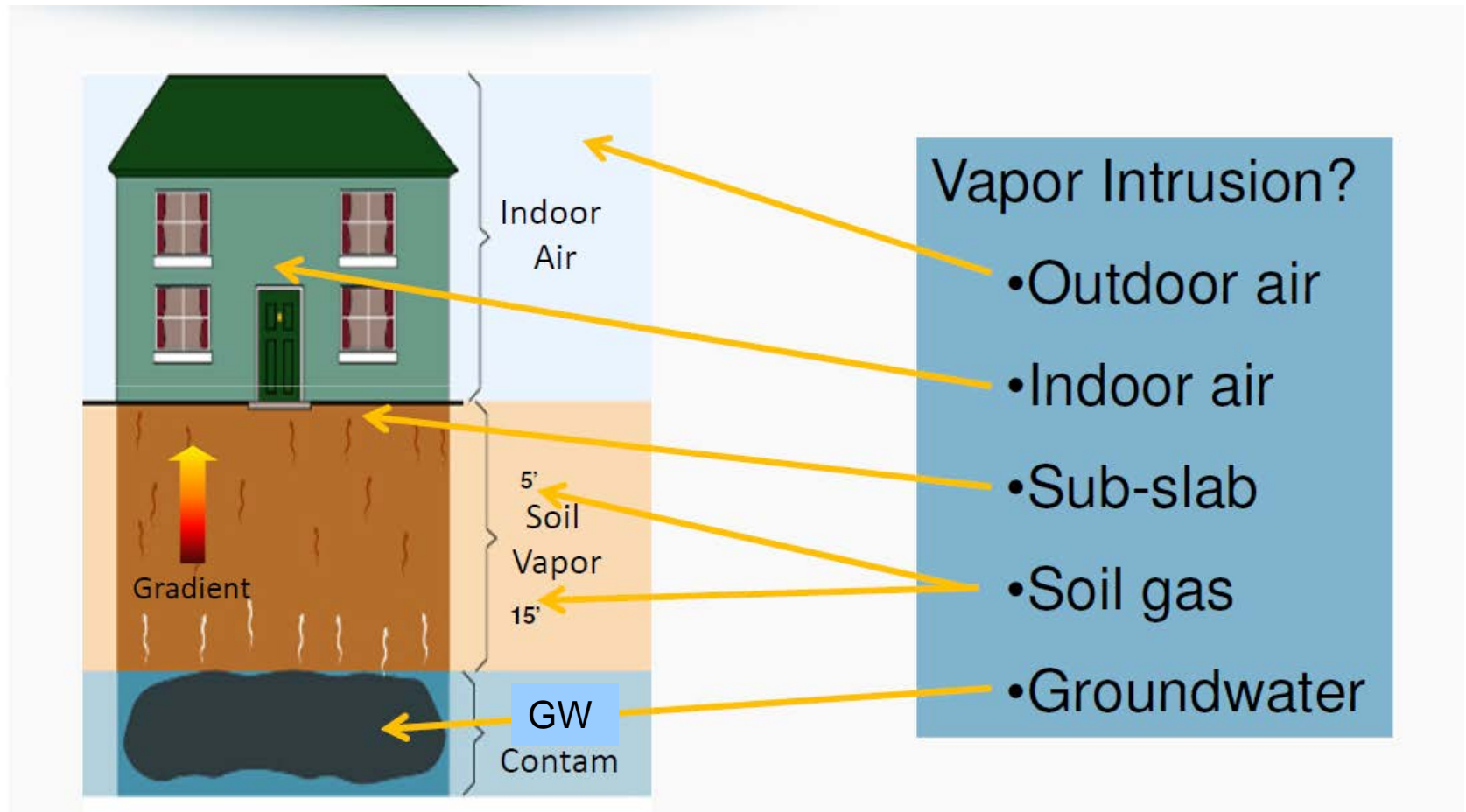
OU2 Vapor Intrusion Investigation

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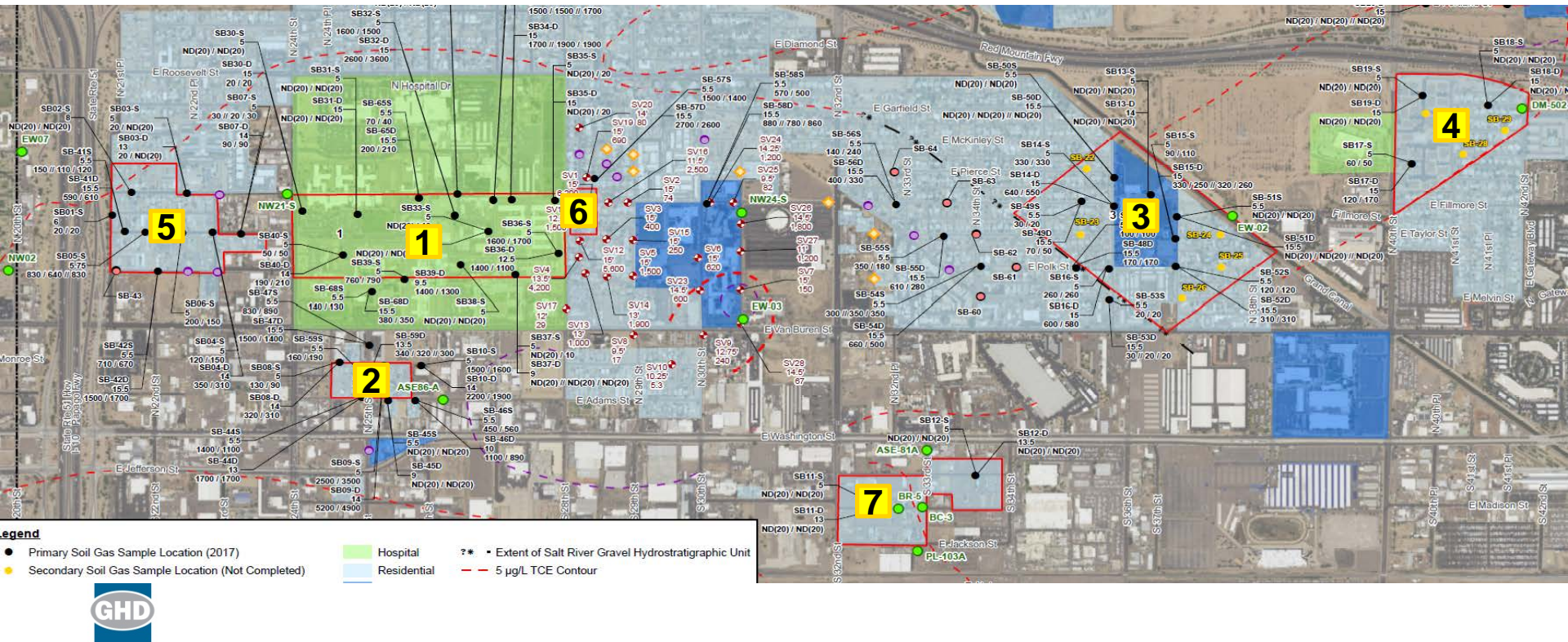
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Vapor Intrusion Components



- 7 Areas were identified for soil gas investigation within OU2.
- The areas contain a mix of residential, commercial, and industrial properties.
- 54 Temporary Soil Gas Monitor Well Points were installed in April/July 2017.
 - Shallow sample interval: ~5 feet below ground surface (bgs)
 - Deep sample interval: ~15 feet bgs
- 2 sampling events were conducted (initial and confirmation).



Area 1 – Arizona State Hospital Complex - Between 24th St. and 28th St. (West and East) and Van Buren St. and Fillmore St. (South and North)



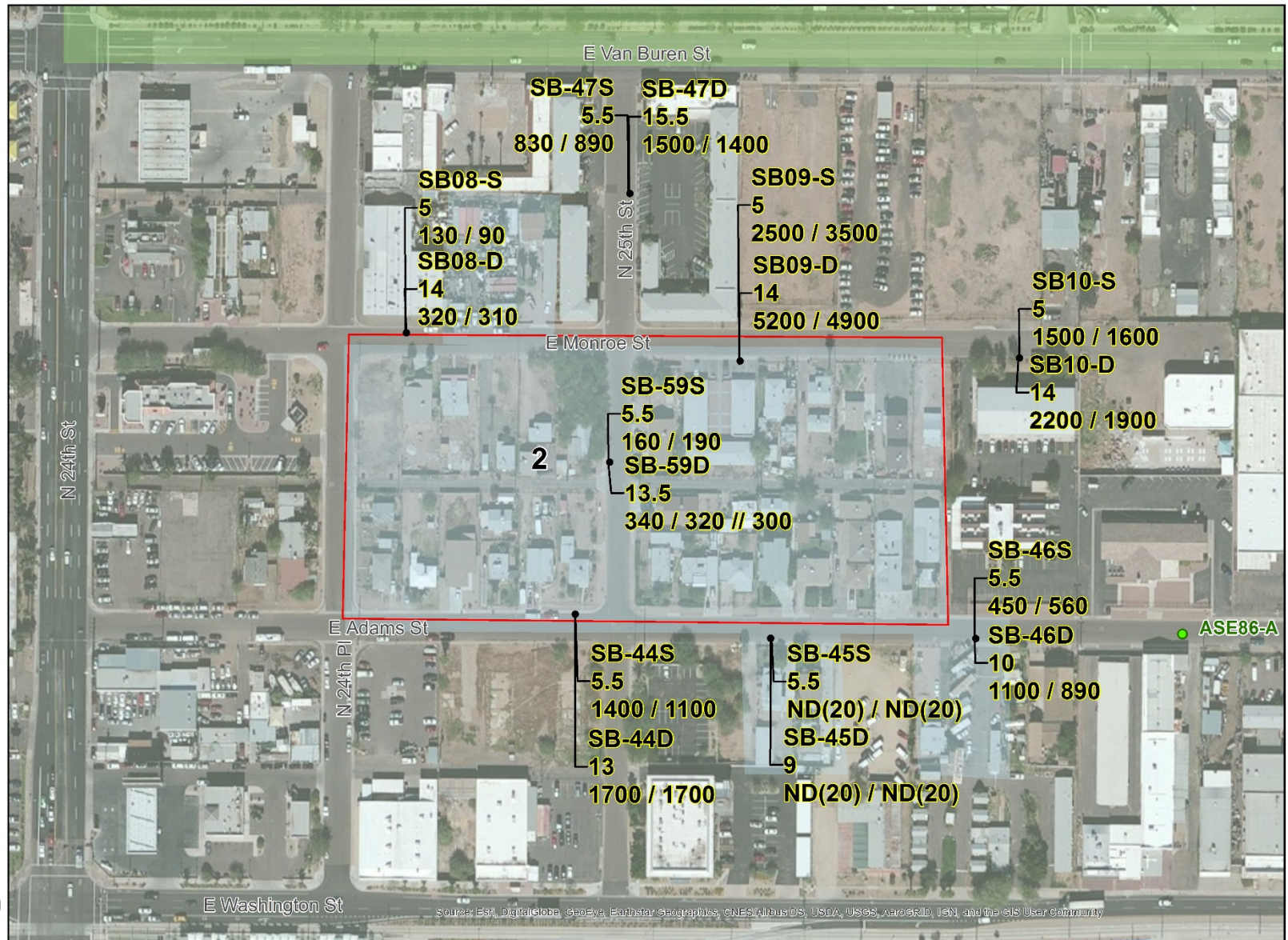
Soil Gas Investigation

Area 1 – Arizona State Hospital Complex Analytical Results

- 15 Temporary Soil Gas Monitor Well Points were installed:
 - 11 wells were installed in April 2017
 - 4 step-out wells installed in July 2017
- TCE was detected at 11 of 15 locations.
- TCE concentrations ranged from non-detect (ND) (<20 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]) to 3,600 $\mu\text{g}/\text{m}^3$.
- The residential Soil Gas Human Health Screening Level (SGHHSL) of 210 $\mu\text{g}/\text{m}^3$ for TCE was exceeded at 6 of 11 locations.
- The industrial SGHHSL of 2,500 $\mu\text{g}/\text{m}^3$ was exceeded at only 1 of 11 locations (only at the 15-foot sample depth).
- Next Steps: Began discussions for indoor air sampling.

Soil Gas Investigation

Area 2 – East and West of 25th St. between Adams St. and Monroe St. (South and North)



Soil Gas Investigation

Area 2 – Analytical Results

- 8 Temporary Soil Gas Monitor Well Points installed:
 - 3 wells were installed in April 2017
 - 5 step-out wells were installed in July 2017
- TCE was detected at 7 of 8 locations.
- The residential SGHSL of $210 \mu\text{g}/\text{m}^3$ for TCE was exceeded at 5 of 8 locations at the 5-foot sample depth, and 7 of 8 locations at the 15-foot sample depth.
- The industrial SGHSL of $2,500 \mu\text{g}/\text{m}^3$ for TCE was exceeded at 1 location, at both sample depths.
- TCE concentrations ranged from ND ($<20 \mu\text{g}/\text{m}^3$) to $5,200 \mu\text{g}/\text{m}^3$.
- Next Steps:
 - Install additional step-out Temporary Soil Gas Monitor Well Point to the south.
 - Continue Indoor Air Investigation (residential) (discussed later in presentation).

Soil Gas Investigation

Area 3 – Between 35th St. and 38th St. (West and East) and between Van Buren St. and the Grand Canal (South and North)



Soil Gas Investigation

Area 3 – Analytical Results

- 13 Temporary Soil Gas Monitor Well Points were installed:
 - 4 wells were installed in April 2017
 - 9 step-out wells were installed in July 2017
- TCE was detected at 10 of 13 locations.
- The Residential SGHHSL of $210 \mu\text{g}/\text{m}^3$ for TCE was exceeded at 5 of 10 locations at the 5-foot sample depth, and 7 of 10 locations at the 15-foot sample depth.
- TCE concentrations ranged from ND ($<20 \mu\text{g}/\text{m}^3$) to $660 \mu\text{g}/\text{m}^3$.
- Next Steps:
 - Install additional step-out Temporary Soil Gas Monitor Well Points in areas west of the Area 3 boundary, with contingent locations.
 - Initiate indoor air investigation at Area 3 residences and in local school

Area 4 – North and South of the Loop 202 between 40th St. and 42nd St. (West and East)



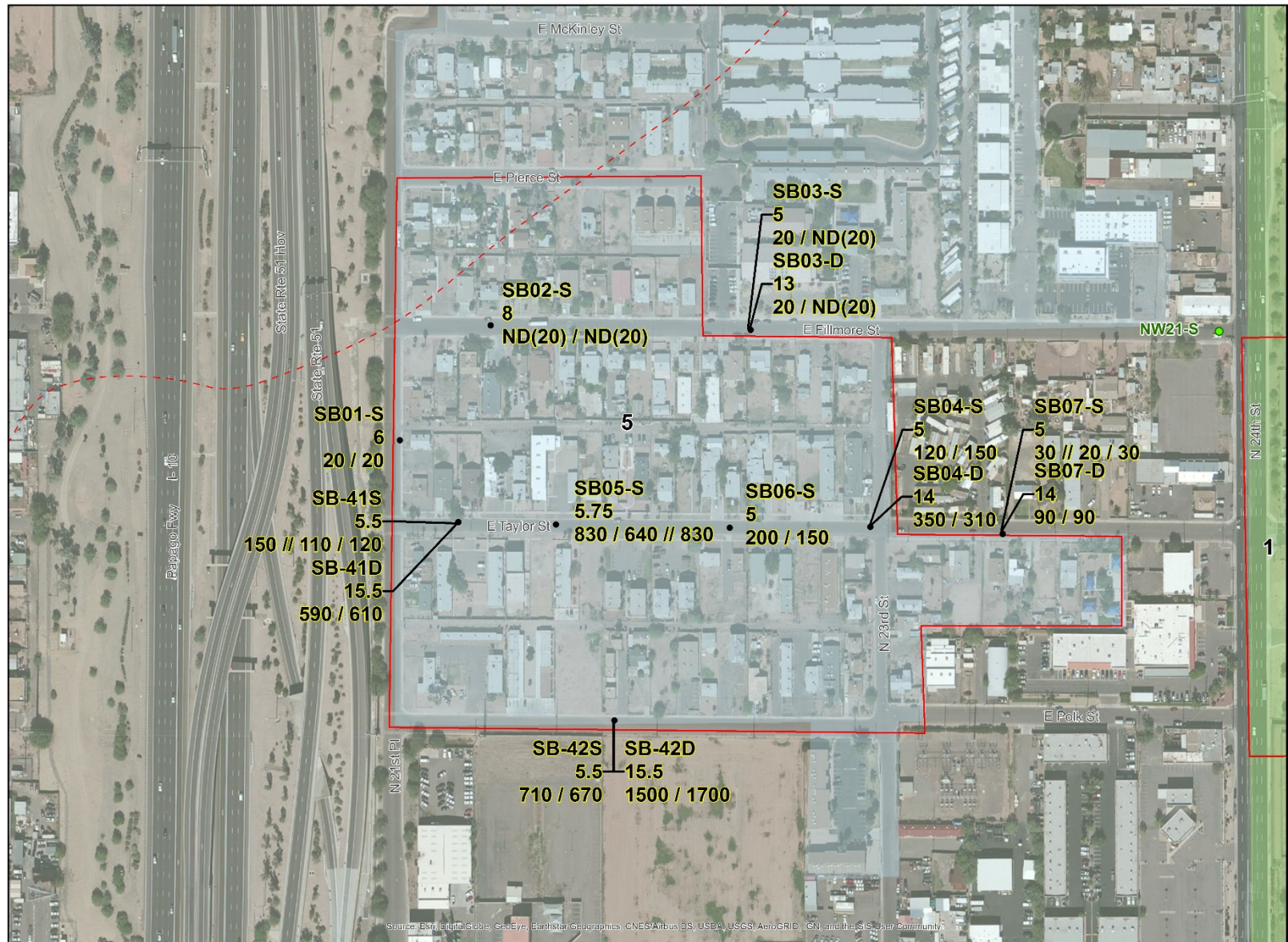
Soil Gas Investigation

Area 4 – Analytical Results

- 5 Temporary Soil Gas Monitor Well Points were installed in April 2017.
- TCE was detected at only 1 of 5 locations, and concentrations from both sample intervals (5 feet and 15 feet) were below the residential SGHSL of $210 \mu\text{g}/\text{m}^3$ for TCE (maximum detected concentration was $170 \mu\text{g}/\text{m}^3$).
- Next Steps: No additional investigation is planned in Area 4.

Soil Gas Investigation

Area 5 – Between I-10 and 24th St. (West and East) and between Polk St. and Pierce St. (South and North)



Soil Gas Investigation

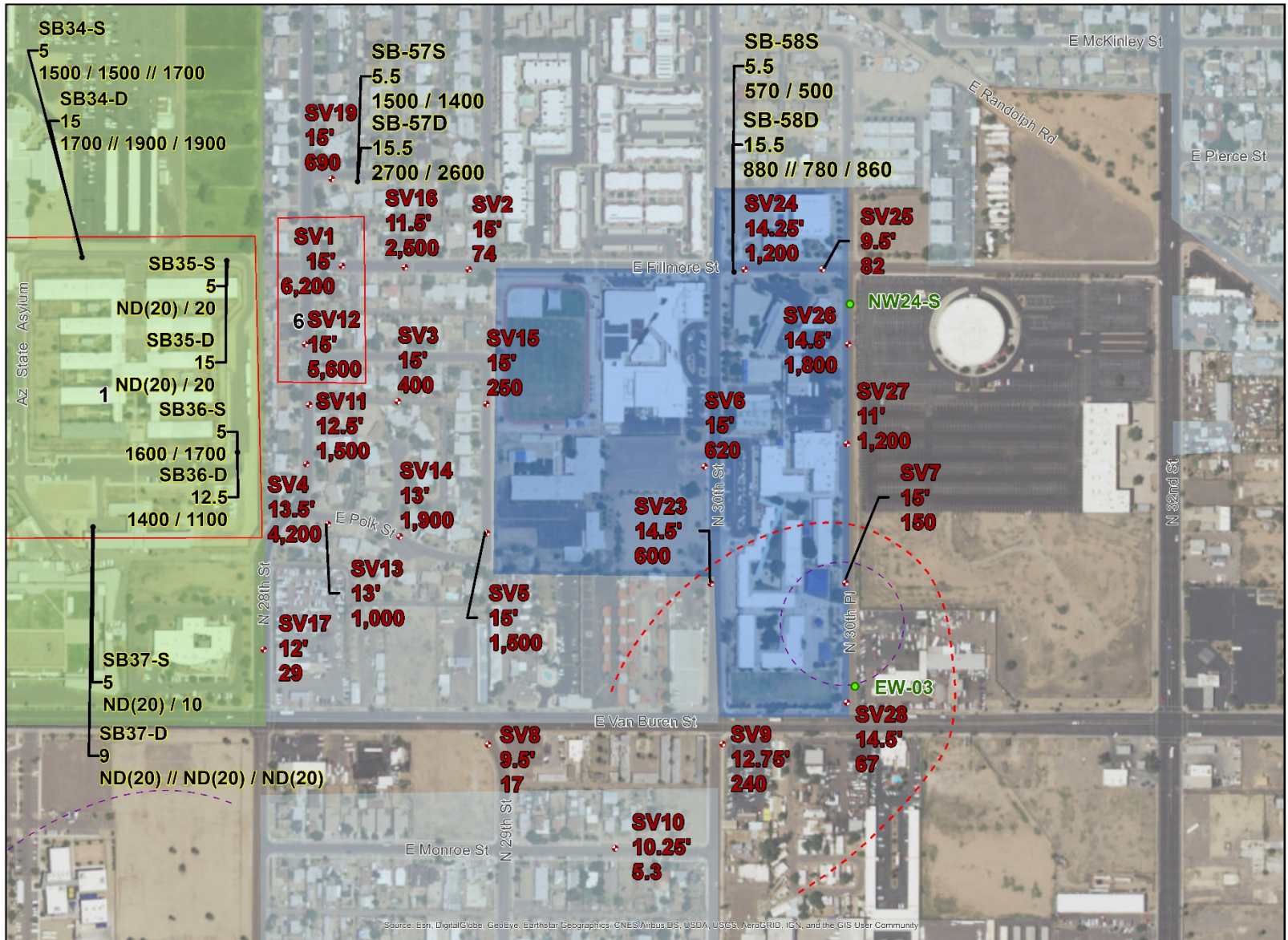
Area 5 – Analytical Results

- 9 Temporary Soil Gas Monitor Well Points were installed in April 2017.
- TCE was detected at 8 of 9 locations.
- The residential SGHHSI of 210 $\mu\text{g}/\text{m}^3$ for TCE was exceeded at 2 of 8 locations at the 5-foot sample depth, and 3 of 5* locations at the 15-foot sample depth.
- TCE ranged from ND ($<20 \mu\text{g}/\text{m}^3$) to 1,700 $\mu\text{g}/\text{m}^3$.
- Next steps:
 - Install additional step-out Temporary Soil Gas Monitor Well Points along the southern and eastern boundaries of Area 5.
 - Initiate indoor air investigation at Area 5 residences.

* Drilling refusal was encountered at some locations.

Soil Gas Investigation

Area 6 – Between 28th St. and 30th Pl. (West and East) and between Van Buren St. and Fillmore St. (South and North)



Soil Gas Investigation

Area 6 – Analytical Results

- Historical trace atmospheric gas analyzer (TAGA) results (2014) had SGHSL exceedances for TCE.
- 2 Temporary Soil Gas Monitor Well Points were installed in July 2017.
- TCE was detected at both locations.
- TCE ranged from 500 $\mu\text{g}/\text{m}^3$ to 1,500 $\mu\text{g}/\text{m}^3$ at the 5-foot sample depth, and 780 $\mu\text{g}/\text{m}^3$ to 2,700 $\mu\text{g}/\text{m}^3$ at the 15-foot sample depth.
- All 4 results exceed the residential SGHSL of 210 $\mu\text{g}/\text{m}^3$ for TCE.
- Next steps:
 - Install additional step-out Temporary Soil Gas Monitor Well Points in northern residential areas, with contingent locations.
 - Continue Indoor Air Investigation (residential) and Wilson School District and St. Mark Catholic Church) (discussed later in presentation).

Soil Gas Investigation

Area 7 – Between 32nd St. and 34th St. (West and East) and between Jackson St. and Pierce St. (South and North)

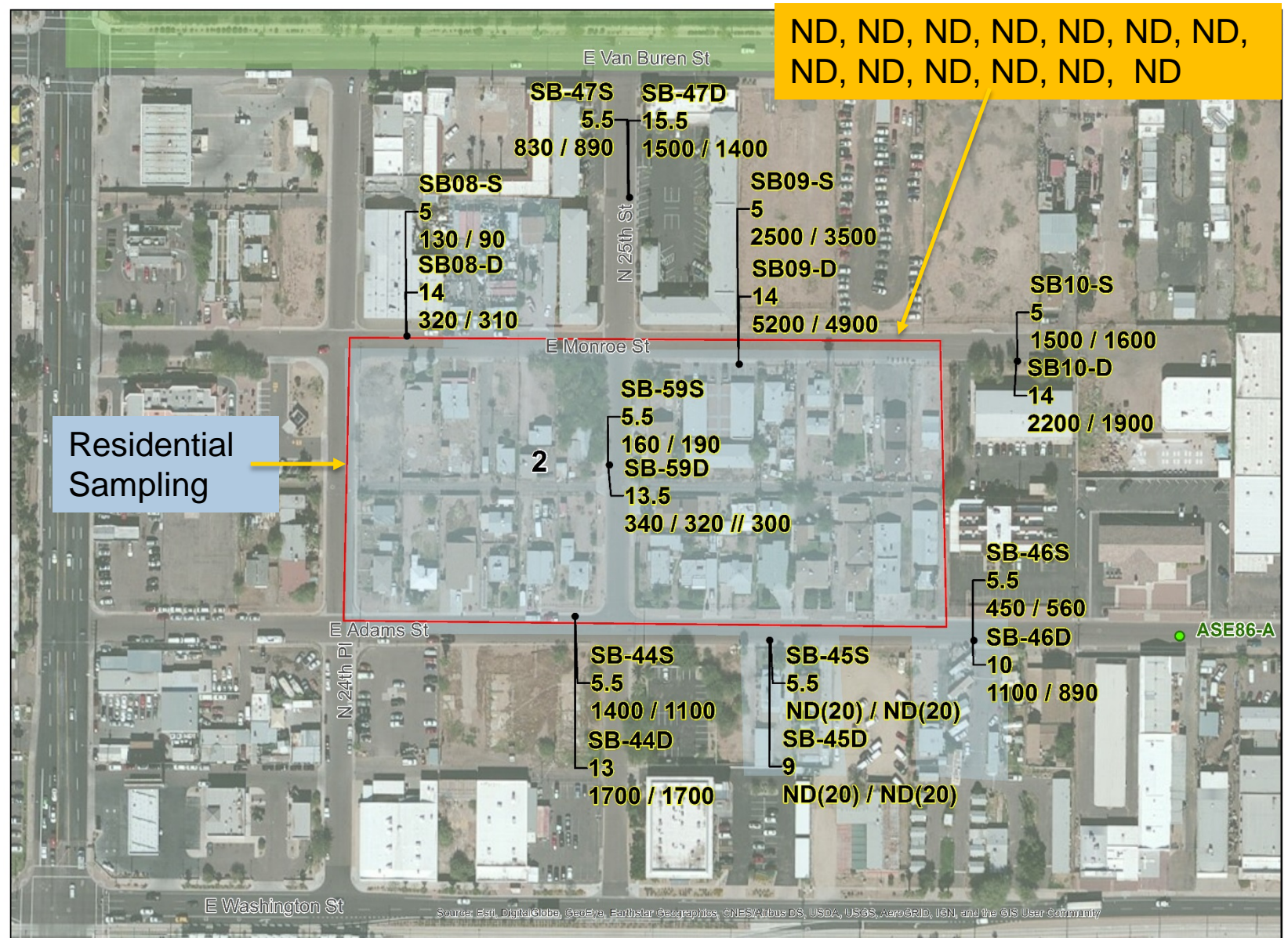


Soil Gas Investigation

Area 7 – Analytical Results

- 2 Temporary Soil Gas Monitor Well Points were installed in April 2017.
- TCE was not detected at both locations/depths.
- Next Steps: No additional investigation is planned in Area 7.

Indoor Air Evaluation – Area 2



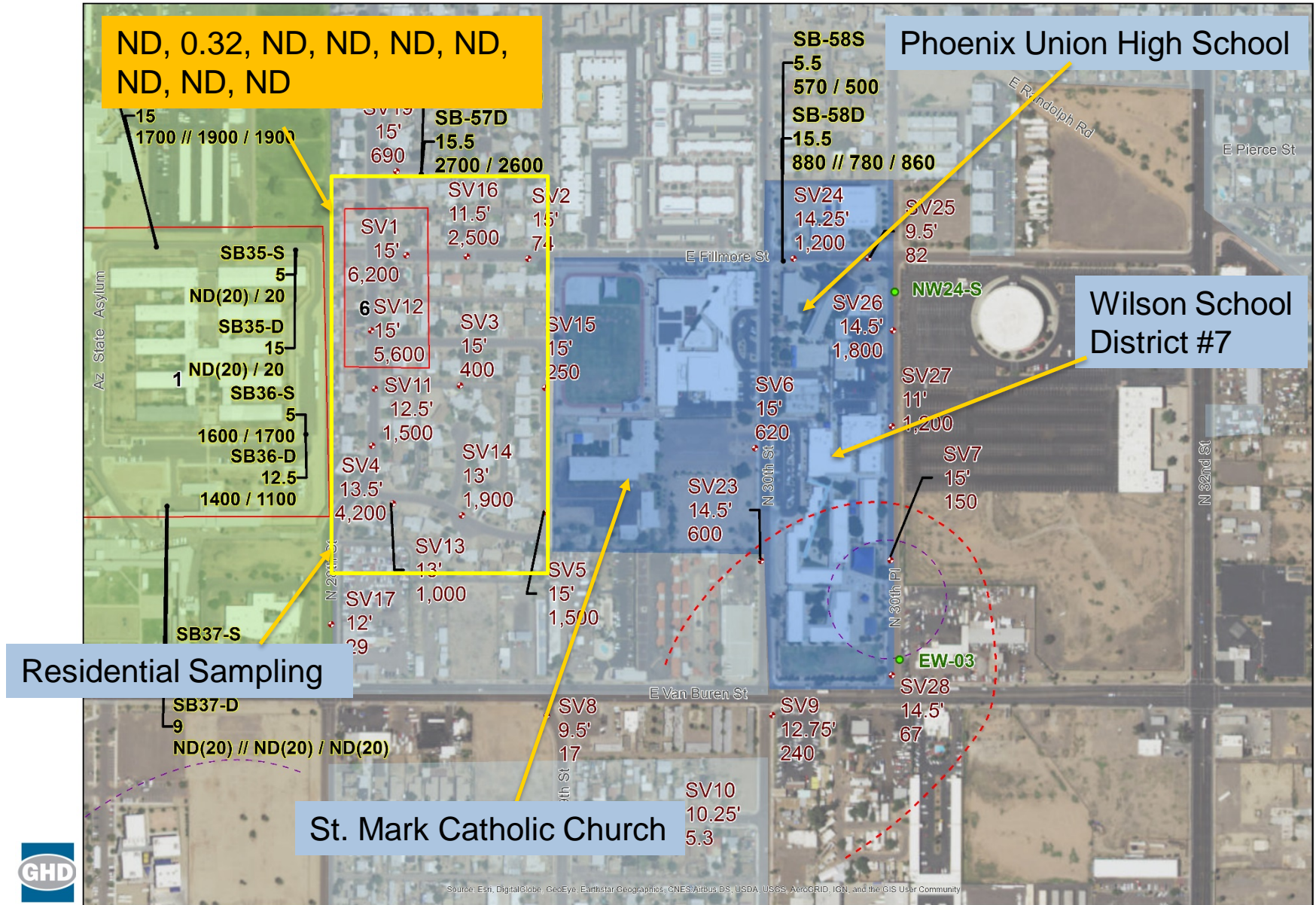
Indoor Air Evaluation

Area 2 – Status

Residential

- Collected indoor air, sub-slab, and ambient air samples at 13 residences in September 2017 (summer round).
- TCE Results for indoor air samples (13):
 - 12 residences were ND ($<0.21 \mu\text{g}/\text{m}^3$)
 - 1 residence initially sampled had indoor air sources and was resampled with results of $0.32 \mu\text{g}/\text{m}^3$.
 - All residences were below $0.48 \mu\text{g}/\text{m}^3$ screening level.
- Next Steps: Prepare for winter sampling round (January 2018).

Indoor Air Evaluation – Area 6



Indoor Air Evaluation

Area 6 – Status

Residential

- Collected indoor air, sub-slab and ambient air samples at 9 residences in September 2017.
- TCE Results for Indoor Air (9):
 - 8 residences were ND ($<0.21 \mu\text{g}/\text{m}^3$)
 - 1 residence initially sampled was found to have indoor air sources and was resampled with results below the $0.48 \mu\text{g}/\text{m}^3$ screening level.
- Next Steps: Prepare for winter sampling round (January 2018).

Indoor Air Evaluation

Area 6 – Status

Schools and Church Campuses

- Screened indoor air at 70 locations using a HAPSITE® (field gas chromatograph) at Wilson School, Phoenix Union High School, and St. Mark Catholic Church in mid-October 2017. All results were ND ($<1.0 \mu\text{g}/\text{m}^3$).
- Collected indoor air and ambient air samples at 34 locations on Wilson School and Phoenix Union High School campuses in mid-October 2017.
- Collected indoor air and ambient air samples at 4 locations at St. Mark Catholic Church in mid-October 2017.
- Next Steps: Validate laboratory analytical data and schedule winter sampling round (January 2018)



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